

BOTANY.—*New Asteraceae from Guatemala collected by A. F. Skutch.*<sup>1</sup>  
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This paper contains descriptions of the new Asteraceae (except the tribe Eupatorieae and the genus *Senecio*) contained in a collection amounting to about 650 numbers made by the ornithologist, Dr. Alexander F. Skutch, in the mountains north of Tecpam (Tecpán), Department of Chimaltenango, Guatemala, in 1933. From the southern base of the mountains, at about 2135 meters elevation (7000 ft.), to about 2745 meters (9000 ft.) the woods are made up mainly of oak, alder, and pine; above 9000 ft. the virgin forests are nearly pure cypress (*Cupressus benthami* Endl.), with a slight admixture of pine and dicotyledonous trees, but no oaks. Lumbering operations above the 9000 ft. level have been followed in some cases by the growth of secondary forest composed of mixed dicotyledonous trees; other areas have grown up again to nearly pure stands of cypress. Below the 9000 ft. level the sporadic but extensive and wasteful native cultivation has left much cleared land and bushy pastures; the most conspicuously abundant composite in such areas throughout the region, but particularly below the 9000 ft. level, is *Baccharis vaccinioides* H. B. K., which sometimes reaches a height of about 10 meters. The two principal localities at which collections were made by Dr. Skutch, Chichavac and Santa Elena, are haciendas in the mountains north of Tecpam, the former three miles from the town and at about 2440–2745 meters altitude, the latter six miles north and at about 2745–3050 meters elevation.

*Archibaccharis prorepens* Blake, sp. nov.

Herba erecta ca. 5 dm. alta, rhizomate repente; caulis tenuis striato-angulatus pilosulus pilis crispatis multilocularibus; folia oblongo-elliptica v. lanceolata ca. 4 cm. longa acuta basi cuneata argute serrata triplinervia breviter petiolata utrinque in nervis et venis sparse crispo-pilosula; capitula staminea pauca cymosa mediocria ca. 5 mm. alta.

Rhizome slender, about 1.5 mm. thick, 30 cm. long and more; stem about 54 cm. high, 1.5 mm. thick, straight or essentially so, simple below the inflorescence, green, sharply several-striate, not densely pilosulous, especially above, with brownish hairs; leaves alternate; internodes 0.6–2 cm. long; petioles about 2 mm. long, pubescent like the stem; blades 2.5–4 cm. long, 9–12 mm. wide, merely acute, sharply serrate above the entire or subentire lower third or quarter (teeth slender, acuminate, antrorse, 0.5–1.5 mm. long), above deep green, sparsely brownish-pilosulous on the chief nerves and veins (these impressed), beneath paler green, sparsely brown-pilosulous on nerves, veins, and veinlets, definitely but not strongly triplinerved and prominulous-reticulate beneath; some of the upper leaves with short leafy

<sup>1</sup> Received June 25, 1934.

branchlets in their axils; heads 8, cymosely arranged, the pedicels slender, angulate, finely crisped-pilosulous, 8–15 mm. long, naked or with a minute bract; heads subcampanulate, 5–6 mm. high and thick, 15-flowered; involucre about 3-seriate, graduate, 4.5–5 mm. high, the phyllaries linear or linear-oblong, acute or subacuminate, loosely and not densely rather long-ciliate especially toward apex, with green 1-ribbed center and narrower subscarios whitish margins, often purple toward apex; flowers in the head all staminate; ovaries abortive; corollas whitish, about 4.8 mm. long (tube sparsely puberulous with clavellate hairs, 2–2.2 mm. long, throat campanulate, nearly glabrous, 0.8–1 mm. long, teeth triangular, sparsely puberulous, spreading, 1.5–1.8 mm. long); style branches slender, subulate-tipped, hispidulous, 1 mm. long.

GUATEMALA: Clearing in the forest, Santa Elena, Dept. Chimaltenango, alt. 2400–2700 m., 22 Jan. 1933, *A. F. Skutch* 190 (type no. 1,494,847, U. S. Nat. Herb.).

*Archibaccharis prorepens* is related to *A. simplex* Blake, of Hidalgo, in which the stem is sparsely incurved-hispidulous and the leaves larger (3.5–7 cm. long, 1.3–2.2 cm. wide), feather-veined, and cuneate-oblong to elliptic-obovate.

***Archibaccharis hirtella* var. *taeniotricha* Blake, var. nov.**

Rami eglandulosi dense et sordide patenti-pilosi pilis articulatis.

OAXACA: Climbing over shrubs to 15 ft. in oak woods, Sierra de Clavellinas, alt. 2745 m., 18 Oct. 1894, *Pringle* 4988; Sierra de Clavellinas, alt. 2745 m., 16–19 Oct. 1894, *C. L. Smith* 259. GUATEMALA: Woody vine, scrambling over other vegetation in the cypress forest, sometimes epiphytic and rooted on moss-covered trunks, Santa Elena, Dept. Chimaltenango, alt. 2400–2700 m., 24 Feb. 1933, *A. F. Skutch* 276 (type no. 1,494,938, U. S. Nat. Herb.) (pistillate); woody vine, cypress woods, Santa Elena, alt. about 2900 m., 24 Dec. 1933, *Skutch* 769 (staminate).

Dr. Skutch's two collections of this plant differ so much in pubescence from most of the material of *A. hirtella* (DC.) Heering available that I have been led to make a reexamination of all the specimens of this species in the U. S. National Herbarium. It proves to be divisible into three forms, two of which are very distinct, the third less so. In 1925 I examined in the Prodromus Herbarium the type of *Baccharis hirtella* DC., collected by Haenke at some unknown locality in Mexico on his journeys between Acapulco and the City of Mexico, and noted that it was very closely matched by *Pringle* 11483, from mountains above Eslaba in the Federal District. In this form the branches and inflorescences are densely puberulous with short spreading hairs, nearly all of which are gland-tipped; longer eglandular hairs are wanting or very few. The midrib of the leaves beneath is similarly glandular-pubescent or sometimes pilose with eglandular hairs. The following specimens in the U. S. National Herbarium are referable to this typical form:

STATE OF MEXICO: *Bourgeau* 955 in part; *Purpus* 18, 1499. FEDERAL DISTRICT: *Pringle* 11483. MORELOS: *Juzepczuk* 820. GUERRERO: *E. W. Nelson* 2237, 2238. OAXACA: *Nelson* 2336 (by error listed as 2236 in my paper



Fig. 1.—*Adenocaulon lyratum* Blake.—a, plant,  $\times \frac{1}{2}$ ; b, flowering head,  $\times 3$ ; c, mature achene,  $\times 2\frac{1}{2}$ ; d, pistillate flower,  $\times 4$ ; e, style of pistillate flower,  $\times 15$ ; f, hermaphrodite flower,  $\times 6$ ; g, style of hermaphrodite flower,  $\times 10$ ; h, two stamens,  $\times 15$ .

on *Hemibaccharis* in 1924). MEXICO without definite locality: *Ehrenberg* 1408.

The other extreme form of the species, with the branches and inflorescences, as well as the midrib of the leaves beneath, densely spreading-pilose with many-celled brownish hairs and essentially eglandular, has been described above. The third form, less distinct than the two others, is

***Archibaccharis hirtella* var. *intermedia* Blake, var. nov.**

Rami eglandulosi puberuli vel breviter pilosuli pilis articulatis antrorse curvatis v. incurvis interdum subpatentibus.

TEPIC: Without definite locality, Jan.-Feb. 1892, *Palmer* 1846. VERA-CRUZ: Shaded banks near Orizaba, alt. 1280 m., 25 Jan. 1895, *Pringle* 6108 (type no. 252873, U. S. Nat. Herb.). MORELOS: Mountain canyons above Cuernavaca, alt. 1980 m., 11 Nov. 1902, *Pringle* 9853. OAXACA: Valley of Oaxaca, alt. 1675-2285 m., 20 Sept. 1894, *Nelson* 1471.

***Adenocaulon lyratum* Blake, sp. nov.**

Caulescens parce erecto-ramosum; caulis anguste alatus eglandulosus; folia lyrato-pinnatifida; achenia cuneato-obovoidea compressa apice late rotundata; antherae apice vix appendiculatae.

Erect perennial herb, about 75 cm. high, the very short rootstock bearing a cluster of fleshy fibrous roots; subterranean portion of stem about 5 cm. long, bearing a few small scales; stem slender, sparsely erect-branched, thinly arachnoid-tomentose, glabrescent or glabrate, narrowly winged throughout except in branches of inflorescence by the decurrent leaf-bases (wings arachnoid-tomentose on one side, 2 mm. wide or less); principal leaves 6-8, crowded near base of stem, lyrate-pinnatifid, obovate in outline, 20-27 cm. long, 6-10.5 cm. wide, above thinly arachnoid, quickly green and glabrate except for short subglandular hairs along the veins, beneath thinly and persistently canescent-arachnoid-tomentose, feather-veined, the terminal lobe pentagonal-deltoid, slightly cordate, acute or obtusish, shallowly repand and minutely mucronulate on margin, the lateral lobes 2-4 pairs, decreasing in size toward base of leaf, broadly oblong to obovate or suborbicular, acute to very obtuse, spreading or retrorse, the broadly margined petioliform base of leaf entire, 3-9 cm. long; leaves above base of stem few (about 3-4), the lower similar to the basal but smaller and with shorter more broadly margined petioliform base, the upper with only 1-2 pairs of lobes; inflorescence branches thinly arachnoid, glabrescent, eglandular, with minute subulate bracts, the heads solitary or paired in the axils, their peduncles erect, at first thickly arachnoid-tomentose, becoming 4 cm. long; heads 10-16-flowered, in flower 2-3 mm. thick; phyllaries subuniseriate, 6-8, subequal, ovate, acute, 1.5-2 mm. long, 0.8-1.2 mm. wide, thin-herbaceous, thinly arachnoid outside, reflexed in age; pistillate flowers 5-8, their corollas white, 0.7-1 mm. long (tube 0.2-0.3 mm. long, teeth 4-5, recurved-spreading, ovate-oblong, acutish, 0.5-0.7 mm. long); hermaphrodite flowers 5-8, the ovary abortive, glabrous, 1.2 mm. long, the corolla white, about 2.2 mm. long (tube cylindric, 0.8 mm., throat funnelform, 0.3-0.4 mm., teeth 5, oblong-ovate acutish, papillose outside at the slightly thickened apex, 0.8-1 mm. long; achenes (not mature) cuneate-obovoid, compressed, green, about 3-nerved on each side, stipitate-glandular, 5.5 mm. long, 3 mm. wide.

GUATEMALA: In open oak woods, Chichavac, Dept. Chimaltenango, alt. 2530 m. (8300 ft.), 20 Sept. 1933, A. F. Skutch 622 (type no. 1,587,623, U. S. Nat. Herb.).

This plant is a most distinct and unexpected addition to one of the most distinctive genera of the family Asteraceae. Only five<sup>2</sup> nominal species of the genus have hitherto been recognized from the western United States and Canada, eastern Asia, and southwestern South America. In the best known species, *Adenocaulon bicolor* Hook., ranging from British Columbia to south-central California, eastward to Montana and sparingly to Michigan, the stem is stipitate-glandular, especially above, and the leaf blades are deltoid or ovate-deltoid, from subentire to shallowly sinuate-toothed or -lobed, usually hastate at base, and borne on a narrowly winged petiole usually much longer than the blade. The leaves are chiefly basal or subbasal, although sometimes extending half way up the stem. Two species have been described from eastern Asia, *A. himalaicum* Edgew. of the Himalayan region, at about 1830–3660 meters elevation (6–12000 ft.), and *A. adhaerescens* Maxim. of Japan. The two are generally considered identical, and are so closely allied to *A. bicolor* that they have been combined with it as a variety (var. *adhaerescens* (Maxim.) Makino) or even united outright, as by Hooker in the *Flora of British India*. The material at hand, although insufficient to settle the status of the Asiatic forms, indicates that the plant of China and Japan is specifically distinct from *A. bicolor*. Two species have been described from southern Chile and the Magellan region, *A. chilense* Poepp.<sup>3</sup> and *A. lechleri* Sch. Bip. The material available is again too slight to enable me to form an opinion as to the distinctness of the supposed species. Reiche, who combines them under the name *A. chilense*, assigns the species a range "en los montes claros de *Nothofagus pumilio*" from the cordilleras of Nahuelbuta and Chillan to the Strait of Magellan. In this plant the stem and inflorescence are purple-glandular, and the leaves oblong or elliptic-oblong, faintly crenate-denticulate, cuneate-rounded to subcordate at base, and narrowly decurrent on the upper part of the petiole, which is about equal to or much shorter than the blade. The Guatemalan *A. lyratum*, constituting the third distinct group in this obviously relict genus, is readily distinguished by its lyrate-pinnatifid leaves, its leafy, winged, eglandular stem, and its comparatively broad, cuneate-obovoid achenes.

The floral details of the species of *Adenocaulon* have not been sufficiently noticed. Bentham and Hooker, in the *Genera Plantarum*, described the corollas as all regular and tubular, and the anthers as entire or barely minutely 2-dentate at base. They placed the genus in the Helianthoideae-Millerieae.

<sup>2</sup> Not counting *Adenocaulon integrifolium* Nutt., universally regarded as identical with *A. bicolor*.

<sup>3</sup> This species is universally attributed to Lessing, but was published by him as of Poeppig. An interesting commentary on the un-Composite-like appearance of the plants of this genus is furnished by the synonym *Boerhaavia nudicaulis* Phil., cited by Reiche under *A. chilense*.

Gray,<sup>4</sup> in his notes on Bentham's work, called attention to the fact that the anthers are strongly sagittate at base, and referred the genus to the Inuleae as a separate subtribe, the Adenocauloneae. Some years later<sup>5</sup> he stated, after examining all the species, that "the basal auricles of the sagittate anthers are manifestly produced into a slender acumination or small tail, the adjacent ones connate," and suggested that *Carpesium* might be associated with *Adenocaulon* in this subtribe, the name of which he emended to Adenocaulaeae. In the *Synoptical Flora*<sup>6</sup> he described the anthers as "minutely but evidently caudate, connate," and noted that the corollas of the pistillate flowers are bilabiate in the Chilean species, with the outer lip 3-lobed; those of the Californian species he regarded as regularly 4-lobed.

*Adenocaulon chilense* is, in its floral details, the most highly developed species of the genus. The corollas of the pistillate flowers are, as described by Gray, bilabiate. The outer lip is oval, at first erectish and somewhat boatshaped, later recurving, and is merely 3-dentate or 3-denticulate; the inner is sometimes entire and apparently made up of a single linear lobe, sometimes 2-dentate, sometimes 2-parted to base. The anthers have ovate or triangular-ovate terminal appendages of normal size and at base are deeply sagittate and provided with linear papillose tails, connate as in the other species, the adjoining ones often decidedly unequal. The style branches in the pistillate flower are rather smaller than elsewhere in the genus, and ovate or quadrate, obtuse; the style in the hermaphrodite flowers is slightly clavate and papillose above, and is barely notched or sometimes bifid.

In *Adenocaulon bicolor*, of western North America, the corollas of the pistillate flowers are usually 4-lobed, sometimes 3-lobed, and are either essentially regular, or slightly irregular with somewhat smaller inner lobe. The anthers have conspicuous triangular-ovate or almost subulate terminal appendages and at base are provided with usually inconspicuous tails, these short- or elongate-triangular. The style branches in the pistillate flower are relatively large, quadrate or even subflabellate, and are subtruncate or broadly rounded with somewhat wavy margin; the style in the hermaphrodite flowers is cylindrical or slightly clavate, papillose above, and entire.

The material at hand from eastern Asia consists of 10 sheets, all from Japan and China, no material from the Himalayas, the type region of *A. himalaicum* Edgew., being available. In general appearance this plant, *A. adhaerescens* Maxim., is similar to *A. bicolor* of western North America, but the heads are larger and more numerous flowered and the leaves, at least in the Chinese material, are reniform or reniform-orbicular rather than deltoid. Most of the Japanese material, however, has the leaves shaped more as in the North American plant, but with conspicuously winged petioles which are often considerably dilated at the base. Better and more mature material (all these specimens except one being without fruit) might make it

<sup>4</sup> Proc. Amer. Acad. 8: 653. 1873.

<sup>5</sup> Proc. Amer. Acad. 17: 214. 1882.

<sup>6</sup> Syn. Fl. 1<sup>2</sup>: 59. 1884.

possible to distinguish more than one Asiatic form. At any rate, as a group they differ sufficiently in floral details to indicate that they are not specifically identical with the North American plant. The pistillate corollas are usually 5-lobed (rarely 4-lobed) and are distinctly irregular, the 2 inner lobes being shorter than the 3 outer and sometimes united to well above the middle. The style branches in the pistillate flower are smaller than in *A. bicolor*, and more or less quadrate; the style in the hermaphrodite flowers is not distinguishable from that of *A. bicolor*. The principal difference, already indicated by Edgeworth for his *A. himalaicum*, is that the terminal appendages of the anthers are greatly reduced, varying from a short deltoid tip to a mere convexity or a blunt mucro. The basal appendages, also, are less developed than in *A. bicolor*.

In *Adenocaulon lyratum* the pistillate corollas are regularly 4-5-lobed, with spreading lobes. The style branches in the pistillate flowers are broadly oblong and truncate; the style in the hermaphrodite flowers is slightly clavate and minutely indented at the papillose apex. The anthers have short triangular basal tails and are provided at apex with the minutest blunt mucro or are essentially without appendage. Even before the corolla opens, the anthers are already dehiscent and connate only in their lower half.

The corollas of the pistillate flowers in this genus frequently bear abortive anthers.

#### *Calea skutchii* Blake, sp. nov.

Frutex v. arbor parva; rami et ramuli dense et sordide sublanatopilosi; folia ovata petiolata serrata acuminata basi cuneata submembranacea triplinervia ca. 1.2 dm. longa supra scaberula subtus in venis et venulis omnibus pilosula in pagina glanduloso-adspersa; capitula parva radiata aurea cymoso-paniculata; involucri ca. 4-seriati ca. 6 mm. alti phyllaria exteriora oblongo-lanceolata interiora oblonga v. cuneato-obovata obtusa apice aureoscariosa pilosula et plusminusve ciliolata; achenia anguste cuneata hirsutula pappo duplo longiora; pappus eum *Viguierae* simulans, e aristis 2 subpaleaceis et squamellis ca. 6 subduplo brevioribus sistens.

Shrub or small tree, reaching 7.5 m. in height; branches stoutish, terete, striatulate, about 6 mm. thick, densely pilose with brownish many-celled somewhat matted hairs; internodes 3-8 cm. long; leaves opposite; petioles 1.5-3 cm. long, pubescent like the stem; blades of the larger leaves 10-17.5 cm. long, 4.5-6.5 cm. wide, acuminate and somewhat falcate, usually long-cuneate at base, serrate above the entire base (teeth about 15-25 pairs, 2-5 mm. apart, depressed-triangular, mucronulate, the mucro callous, about 0.3 mm. long), tripli-nerved 1-3.5 cm. above the base or sometimes 5-plinerved, somewhat bullate above, prominent-reticulate beneath, above scabrid with short slightly tuberculate-based antrorse-curved hairs, beneath slightly paler, densely pilosulous on all the veins and veinlets with loosely spreading whitish hairs and along costa spreading-pilose; heads about 1.4 cm. wide, very numerous, forming a ternately divided convex or flattish panicle 18-28 cm. wide, about equaled by the leaves; pedicels slender, densely sordid-pilosulous, mostly 4-10 mm. long; disk slender-campanulate, 9-11 mm. high, 4.5-7 mm. thick (when moistened); involucre not strongly

graduated, the few outermost phyllaries oblong or oblong-ovate or -lanceolate, about 2.5–3.5 mm. long, about 0.7 mm. wide, obtuse or acutish, with subindurate body and short somewhat loose greenish apex, the others narrowly oblong to oblong- or wedge-obovate, obtuse or apiculate, about 2 mm. wide, sometimes purple-dotted or -lineolate above, with subindurate more or less vittate body, narrow yellow subscarios margin, and broad scarios rather loose yellow tip; receptacle convex; rays 8, pistillate, golden yellow, the tube 2 mm. long, stipitate-glandular, the lamina oval, 2–3-denticulate, 6–7-nerved, 5 mm. long, 3 mm. wide; disk flowers about 28–32, their corollas golden yellow, 5 mm. long (tube stipitate-glandular, 1.7 mm., throat slender-campanulate, finely stipitate-glandular, 2.5 mm., teeth ovate, slightly stipitate-glandular, 0.8 mm. long); pales narrow, about 7 mm. long, 1-nerved, pilosulous along keel especially above, puberulous toward apex, the somewhat ampliate, obtuse or apiculate, scarios, golden-yellow or sometimes brownish tip slightly spreading; achenes (immature) narrowly cuneate, compressed-quadrangular, 3.5 mm. long, 0.8 mm. wide, blackish brown, 1-ribbed and usually 2–3-nerved on each side, hirsutulous on the angles and toward apex; pappus awns 2, lanceolate, acuminate, hispidulous-ciliolate, about 1.5 mm. long; squamellae on each side about 2–4, linear to oblong, acute or lacerate, 0.5–0.8 mm. long, one sometimes joined to the awns on each side at base; style branches with short triangular finely hispidulous appendages.

GUATEMALA: Hardwood forest, Chichavac, Dept. Chimaltenango, alt. 2400–2700 m., 27 Feb. 1933, *A. F. Skutch* 294; bushy second growth on mountain side by the "Camino real" above Tecpam, Dept. Chimaltenango, alt. about 2745 m., 4 Dec. 1933, *Skutch* 729 (type no. 1,587,727, U. S. Nat. Herb.).

Although the pappus of this plant is so similar to that of *Viguiera* as to be practically indistinguishable, the fertile rays and scarios-tipped phyllaries show that it is really a *Calea* of the subgenus *Tetrachyron*, deviating somewhat in pappus character from the generally accepted definition of that group. It is quite distinct from any of the half dozen members of that group already described.

#### *Alepidocline* Blake, gen. nov.

Herba annua ramosa pubescens et parum glandulosa, foliis oppositis ovatis petiolatis serratis triplinerviis membranaceis, capitulis heterogamis radiatis mediocribus cymosis, radiis parvis albis denique roseis v. purpureis, disco aureo. Involucri ovoidei v. hemispherici gradati ca. 5–6-seriati phyllaria elliptico-oblonga v. ovalia v. intima lanceolato-oblonga viridescencia subsicca vittata obtusa v. intima acuta anguste subscarioso-marginata intima apice purpurascencia. Receptaculum convexum hirsutulum nudum vel interdum prope marginem paleis paucissimis linearibus integris onustum. Radii 1-seriati feminei fertiles, tubo elongato tenui, lamina parva patente 3-dentata. Flores disci numerosi hermaphroditi fertiles, corollis tubulosis, tubo limbo longiore, faucibus campanulatis, dentibus 5 brevibus. Stamina 5, antheris basi obtuse sagittatis, apice appendice oblongo-ovata obtusa munitis. Styli rami lineares ad apicem minute hispiduli, appendice deltoidea obtusa papillosa praediti. Achenia obovoidea obcompressa plano-convexa parva glabra nigra lucida, apice annulo brevissimo subintrorso donata. Pappus caducus e aristis ca. 8–10 1-seriatis seti-





Fig. 2.—*Alepidocline annua* Blake.—*a*, plant,  $\times \frac{1}{2}$ ; *b*, head,  $\times 3\frac{1}{2}$ ; *c*, receptacle,  $\times 5$ ; *d*, ray flower,  $\times 5$ ; *e*, disk corolla,  $\times 8$ ; *f*, two stamens,  $\times 15$ ; *g*, style branches of disk flower,  $\times 15$ ; *h*, disk achene, ventral view,  $\times 8$ ; *i*, same, lateral view; *j*, same in cross section; *k*, apex of achene, enlarged; *l*, pappus awn,  $\times 13$ .

formibus parum inaequalibus hispidulis sistens.—Species typica *Alepidocline annua*, sp. nov.

*Alepidocline annua* Blake, sp. nov.

Character ut supra donatus.

Slender erect annual, 6–8 dm. high, with opposite erectish or spreading-ascending branches; stem 2.5–5 mm. thick, terete, striatulate especially above, purplish, sparsely spreading-pilose especially just below the nodes with several-celled, acuminate, white, not tuberculate-based hairs and in the region of the inflorescence with some shorter gland-tipped hairs; internodes 6.5–16 cm. long, petioles slender, flattened, pilose on margin and back, 5–30 mm. long, connate in a line at base; blades 4.5–7.5 cm. long, 2.5–4.5 cm. wide, acuminate and often somewhat falcate, cuneate at base, serrate above the entire or subtire cuneate base (teeth about 9–18 pairs, 2–4 mm. apart, usually depressed-deltoid, with short obtuse callous usually purplish mucros), triplinerved a little above the base and lightly prominulous-reticulate beneath, above rather light green, sparsely and uniformly pilose with few-celled spreading white hairs (the basal cell short, somewhat swollen, and subglandular) and on the veins sparsely pilose with shorter many-celled hairs, beneath scarcely paler green, similarly but somewhat more densely pubescent; heads about 5–8 mm. wide, in small cymes of 2–4 at tips of stem and branches, together forming a loose leafy panicle, the pedicels naked, 1.5–4 cm. long, spreading-pilosulous and with sparse shorter gland-tipped hairs; disk 6–7 mm. high, about 5–6 mm. thick; involucre 5–6.5 mm. high, in the dried state hemispheric, 6–10 mm. thick, when moistened bluntly ovoid (in young flower, then 5 mm. thick) to campanulate-hemispheric (when submature, then 6 mm. thick), the outermost phyllaries elliptic or oblong, about 2.5 mm. long, 1 mm. wide, obtuse, about 3-nerved, slightly ciliolate, the middle ones oval, 2.5–3 mm. wide, 6–7-nerved, the inner oblong-lanceolate, acute or acuminate, obscurely ciliolate, the inner and often the middle with purplish tips, all appressed; rays 10–17, the tube spreading-pilosulous, 3.2–5 mm. long, the lamina quadrate-oblong, white turning pink or purplish with age, 1.5 mm. long, 1 mm. wide, 3-dentate, 5–7-nerved; disk flowers numerous, their corollas yellow, 3–3.5 mm. long (tube spreading-pilosulous, 2–2.2 mm. long, throat slender-campanulate, essentially glabrous, 0.7–1 mm. long, teeth ovate, hispidulous, 0.3–0.4 mm. long); achenes obovoid, 1.5 mm. long, 0.8 mm. wide, black, shining, glabrous, finely and rather obscurely several-striatulate, plano-convex or sublenticular, the outer face rounded, the inner flattish or somewhat rounded, sometimes sulcate or bluntly 1–2-ribbed; pappus awns whitish, 1.5–1.8 mm. long.

GUATEMALA: Weed in cornfield, Chichavac, Dept. Chimaltenango, alt. 2430 m. (8300 ft.), 2 Dec. 1933, A. F. Skutch 722 (type no. 1,587,766, U. S. Nat. Herb.).

Although only a cornfield weed, this plant evidently represents a new genus allied to *Schistocarpa*, but differing in its essentially naked receptacle and in its obcompressed achene with rounded summit and slightly introrse apical annulus, much narrower than the achene and bearing a pappus of fewer, slightly stouter, setiform awns. In *Schistocarpa* the receptacle is paleaceous throughout, with a usually trifid pale at the base of each flower, and the achenes are slenderly obovoid-oblong, subterete or slightly 3–5-

angulate, truncate at apex, and bearing a short slightly expanded collar terminating in a disk composed of the united bases of the numerous pappus bristles, from which the fragile bristles themselves are readily deciduous. In its general appearance, *Alepidocline* is suggestive of the tribe Heliantheae. The generic name is derived from  $\alpha$ , privative,  $\lambda\epsilon\pi\iota\varsigma$ , a scale, and  $\kappa\lambda\iota\nu\eta$ , a bed.

***Cirsium guatemalense* Blake, sp. nov.**

Bienne 1.5 m. altum, radice tenui elongato; caulis arachnoideo-lanatus supra pauci-ramosus; folia oblonga v. lanceolato-oblonga sessilia breviter decurrentia acuminata usque ad vel ultra medium pinnatifida supra tenuiter arachnoidea mox glabrescentia v. glabrata non setosa subtus canescenti-tomentosa submembranacea, lobis ca. 11-jugis oblongis sinuato-dentatis v. sinuato-lobatis saepe subbifidis modice spinosa, spinis tenuibus albidis 3–5 mm. longis; capitula ca. 8–10 majuscula ca. 3–4 cm. alta 4–5 cm. crassa ut videtur nutantia saepius solitaria in ramis elongatis foliosis; involucri 2.7–3.5 cm. alti valde et regulariter gradati ca. 8-seriati basi bracteis paucis parvis spinoso-pinnatis donati phyllaria erecta v. appressa anguste triangularia integra sensim acuminata margine infra spinam dense et pulchre canescenti-arachnoideo-tomentosa nigrescenti-viridia anguste et pallide subscarioso-marginata, omnia (intimis innocuis exceptis) spina erecta subvalida albida 3–7 mm. longa donata; corollae albiae, limbo tubo paullo breviora paulum infra medium 5-fido.

Evidently biennial, the rather slender scarcely branched root 14 cm. long and more; stem rather stout, 8–14 mm. thick, striate, erect, hollow, rather thinly brownish-arachnoid-lanate; internodes 2–6 cm. long; principal leaf blades 15–30 cm. long, 5–12 cm. wide, decurrent for 0.5–3 cm. (the wings spiny-lobed), soon bright green above and nearly or quite glabrous except for some sordid pilosity along costa and chief lateral veins, beneath densely canescent-tomentose and along the costa brownish-lanate, the terminal lobe slender, acuminate, 2.5–4.5 cm. long, tipped with a spine about 3 mm. long, the lateral lobes about 2–4 cm. long and about 1.2–3 cm. wide, their teeth and tip bearing rather weak whitish spines 2–4 (–8) mm. long; heads solitary (rarely in 3's) on erectish leafy branches or peduncles 18–30 cm. long, their leaves similar to those of main stem but much smaller (4.5–8 cm. long) and with only about 5–7 pairs of teeth or short lobes, their spines up to 10 mm. long; involucre (in dried state) hemispheric, umbilicate at base, the phyllaries 1.2–2.5 mm. wide below, 1-ribbed at apex, not glandular, the inner purplish toward base of spine, the inmost with very narrow erectish entire purplish subscarios tip; corollas 2.1–2.7 cm. long (tube 12–14 mm., throat distinct, 4–6 mm., teeth linear, acute, slightly thickened subapically, 5–7 mm. long); achenes oblong, blackish with whitish apex, glabrous, shining, 4.5 mm. long; pappus whitish, 2 cm. long, the awns all plumose, about 10 of the inner slightly thickened at apex; anthers light purple, with narrowly triangular, slenderly acuminate tips; node of style obscure.

GUATEMALA: Edge of oak woods, Chichavac, Dept. Chimaltenango, alt. 2530 m. (8300 ft.), 10 Nov. 1933, A. F. Skutch 660 (type no. 1,587,661–3, one plant mounted on three sheets).

*Cirsium guatemalense* finds its nearest ally, apparently, in *C. radians* Benth., also Guatemalan. In that species, however, according to Petrak's description,<sup>7</sup> the phyllaries are more or less dimorphous, the outer longer

<sup>7</sup> Beih. Bot. Centralbl. 27: Abt. 2: 240. 1910.

and subrecurved, with a long spreading spine, the inner erect and not spinose. In *C. guatemalense* the phyllaries (except the inmost) are all similar, erect, and strongly graduated in length from the short outer to the long inner.

BOTANY.—*The American species of Elytraria*.<sup>1</sup> E. C. LEONARD,  
U. S. National Museum. - (Communicated by E. P. KILLIP.)

*Elytraria*, a genus of Acanthaceae, subfamily Nelsonioideae, was described<sup>2</sup> by Michaux in 1803. He published at this time a single species, *E. virgata*, citing as a synonym *Tubiflora carolinensis* Gmel.<sup>3</sup> Although antedating *Elytraria*, *Tubiflora* is rejected by the International Rules. Since Michaux's publication about 30 species have been described by various authors, though most of these have been reduced to synonymy.

The name *Elytraria* is derived from the Greek *ελυτρον* (*elytron*, sheath), in reference to the firm coriaceous bracts which sheathe the scapes and subtend the flowers. When herbaceous and having a rosette of basal leaves, fibrous roots, and simple scapes tipped by cylindric spikes, these plants superficially resemble the common plantain (*Plantago*). The flowers are white or blue, and inconspicuous. In *E. tuberosa*, here described as new, the roots are thick-fusiform, resembling those of *Ruellia tuberosa*. In all other species of the genus the roots are fibrous.

The genus, as here regarded, consists of seven species, all native of temperate or tropical America, except *E. acaulis* (L. f.) Lindau, which is found chiefly in Africa. *Elytraria squamosa* (Jacq.) Lindau, widely distributed throughout tropical and subtropical America, is found also in Asia and the Philippine Islands.

#### KEY TO THE AMERICAN SPECIES

Flower bracts, or at least some of them, tridentate, the lateral teeth scarious, triangular or rhombic, the middle tooth awn-shaped; plant usually caulescent. . . . . 1. *E. squamosa*.

Flower bracts entire; plant acaulescent.

Scapes 15 to 35 cm. long, much exceeding the leaves.

Leaf blades oblong-elliptic, usually more than 2 cm. wide.

2. *E. caroliniensis*.

<sup>1</sup> Published by permission of the Secretary of the Smithsonian Institution. Received June 12, 1934.

<sup>2</sup> Fl. Bot. Amer. 1: 9. pl. 1. 1803.

<sup>3</sup> J. F. GMELIN, Syst. Nat. 27. 1791.